

What is claimed is:

1. A method of producing nanoscale metallic colloids comprising the steps of:
  - a. supplying an elemental metal, wherein the size of said elemental metal is in the range of 1-10 microns;
  - b. suspending said elemental metal in a non-aqueous organic liquid that is non-reactive to the surface of said elemental metal;
  - c. adding a dispersant;
  - d. comminuting the materials; and
  - e. agitating the mixture at a rate and time necessary to produce nanoscale particles of product material.
2. The method of claim 1, wherein said elemental metal is selected from the group consisting of iron, tin, zinc and palladium and mixtures thereof.
3. The method of claim 1, further comprising the step of mixing said product material with a salt solution comprising a second metal.
4. The method of claim 3, wherein said second metal is selected from the group consisting of platinum, palladium, zinc, nickel and tin and mixtures thereof.
5. The method of claim 1, further comprising the step of drying the product material.
6. The method of claim 1, further comprising the step of storing the product material in an anaerobic solution.
7. The method of claim 1, wherein said product material has a size in the range of 100-400 nanometers.
8. The method of claim 1, wherein said non-aqueous organic liquid is selected from the group consisting of dodecane, butyl acetate and polypropylene glycol ethyl ether

acetate and mixtures thereof.

9. The method of claim 1, wherein said dispersant is selected from the group consisting of SOLSPERSE<sup>®</sup> 20,000, SOLSPERSE<sup>®</sup> 24,000, SOLSPERSE<sup>®</sup> 32,600, SOLSPERSE<sup>®</sup> 32,500, DISPERBYK<sup>®</sup> 108, DISPERBYK<sup>®</sup> 164 and DISPERBYK<sup>®</sup> 167.
10. The method of claim 1, wherein said comminuting is performed by a method selected from ball milling, rod milling and high speed gas jet agitation.
11. A method of injecting nanoscale metal particles into soil, comprising the steps of:
  - a. making a colloid suspension having metal particles in the presence of a carbohydrate; and
  - b. injecting said colloid suspension into said soil through a well at a flow rate sufficient to move said colloid suspension through said soil.
12. The method of claim 11, wherein said metal is selected from the group consisting of iron, tin, zinc and palladium and mixtures thereof.
13. The method of claim 11, wherein said metal is a mixture of elemental metal and a second metal.
14. The method of claim 13, wherein said second metal is selected from the group consisting of palladium, platinum, zinc, nickel and tin and mixtures thereof.
15. The method of claim 11, wherein said carbohydrate is corn syrup.
16. The method of claim 11, wherein the injection is achieved with nitrogen under pressure.
17. The method of claim 11, wherein the injection is achieved with hydraulic pressure.
18. The method of claim 17, wherein said colloid suspension is a slurry of elemental

metal and carbohydrate solution.

19. The method of claim 18, wherein said colloid suspension additionally contains sand.
20. The method of claim 11, wherein said carbohydrate is added in atomized form by injecting said carbohydrate into compressed nitrogen gas.
21. The method of claim 11, wherein said elemental metal particles have a size in the range of 100-400 nanometers.

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